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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,757

10/30/2001

Tyler A. Lowrey

INTO-0013-US (P13341)

8684

21906 7590 04/05/2007  
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EXAMINER

SCHILLINGER, LAURA M

ART UNIT

PAPER NUMBER

2813

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/020,757

Applicant(s)

LOWREY, TYLER A.

Examiner

Laura M. Schillinger

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10,31-37,41-44 and 46-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-10,31-37 and 41-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44,46 and 48-50 is/are rejected.
- 7) ☒ Claim(s) 47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Election/Restrictions*

Claims 1-10,31-37, 41-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/19/07.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 44, 46, 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolstenholme et al ('890) in further view of Ovshinsky et al ('592).

Wolstenholme teaches the following limitations as cited below:

44 (Previously Presented). A method comprising:

forming an electrically insulating protective layer (45) over a conductive lower electrode (22) of a phase change memory (Fig.2);

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forming a pore over said insulating protective layer (mask formed over layer 45 inherently must have “pores” in it as part of the pattern to form a pore in layer 45- see Col. 4, lines: 15-25- therefore the pore is formed over the insulating protective layer); etching through said pore to open up said protective layer (Fig.2 (50)- layer 45 is etched through the pore in the mask as explained above); forming a chalcogenide in said pore touching said lower electrode Fig.3 (55)); and

However, Wolstenholme et al fails to explicitly teach “forming the lower electrode and covering the lower electrode with a protective layer in the same chamber” as recited by claims 44 **and** 46.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolstenholme’s teachings to further include forming the lower electrode and protective layer in the same chamber as claimed by the Applicant because such compounding steps are known in the art. Moreover, Ovshinsky et al (‘592) specifically teaches to use the same deposition chamber to form an electrode and a silicon nitride layer (Col.14, lines: 20-25) showing that this use is possible to reduce the number of chambers needed to form devices.

48 (Previously Presented). layer of an insulator. The method of claim 44 including forming the protective layer of an insulator (Col.4, lines: 15-25).

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49 (Previously Presented). The method of claim 48 including forming the protective layer of a material in the form of silicon nitride (Col.4, lines: 15-25).

50 (Previously Presented). The method of claim 49 including forming the silicon nitride in the form of Si<sub>3</sub>N<sub>4</sub> (inherent- this is the chemical compound representation of silicon nitride).

#### ***Allowable Subject Matter***

Claim 47 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach the limitations of claim 46 and 44 in combination with depositing the electrode and protective layer in the same deposition chamber without back venting to atmosphere as recited by claim 47.

#### ***Response to Arguments***

Applicant's arguments with respect to the above claims have been considered but are moot in view of the new ground(s) of rejection.

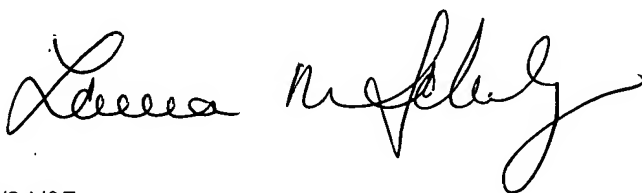
#### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M. Schillinger whose telephone number is (571) 272-1697. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Laura M Schillinger  
Primary Examiner  
Art Unit 2813

03/24/07